REMARKS

Reconsideration of the pending application is respectfully requested. After entry of the enclosed amendment, claims 6, 9-10, 12-19, 21-27, and 31 remain in the pending application. Please cancel claims 7-8, 11, 20, and 30. Claims 6, 12, 16, and 24 have been amended to more clearly define Applicant's instant invention.

Objection of Claim 30

The Examiner has objected to claim 30 because it depends from canceled claim 29. Applicant's attorney has addressed Examiner's objection by canceling claim 30, and respectfully requests withdrawal of this objection.

35 U.S.C. § 102(b) Rejection of Claims 6, 16-18, and 21-22

The Examiner has rejected claims 6, 16-18, and 21-22 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 4,561,453, issued to Rothchild. The Examiner states that Rothchild teaches an apparatus for treating tobacco under pressure which includes a pressure vessel which operates at about 65 psig having entrance and exit conduits, entrance and exit locks, and nozzles. Applicant's Attorney respectfully traverses this ground of rejection.

MPEP 2142 states that in order to anticipate, "[t]he identical invention must be shown in as complete detail as is contained in the...claim." Richard v. Suzuki Motor Co., 868 F.2d 1226, 1236, 9 U.S.P.Q.2d 1913, 1920 (Fed.Cir. 1989). Rothchild fails to anticipate claims 6 and 16 as amended, and these claims are believed to overcome the Examiner's instant rejection.

Applicant's invention is distinguishable over Rothchild under 35 U.S.C. §102.

Rothchild discloses an apparatus for treating the continuous flow of tobacco under pressure, whereby treatment occurs when the impregnating gas or liquid is discharged inside the inclined tumbling cylinder 16. Tobacco to be impregnated is introduced through an entrance conduit 12, where it falls onto a chute 15 and flows by gravity (i.e., free falls) from the entrance lock 14 down the chute 15 into the inclined tumbling cylinder 16. Rothchild only discloses the application of an impregnating gas or liquid to tobacco particles moved inside the tumbling cylinders 16, not during the free fall transport through the chute 15. In Applicant's invention, on the other hand, the impregnation of the tobacco particles occurs when the tobacco is free falling through the pressurized chamber 3, not in a tumbling cylinder, as with Rothchild's invention. Applicant's invention claims a vertical chamber 3 through which tobacco particles free fall to a horizontal airflow dryer 5. Inside the chamber 3 are ring nozzles 2 that emit the gas or liquid to impregnate the free falling tobacco. In Rothchild's invention, nozzles are located in the tumbling chamber 16, not in the pressurized chamber 3 where the free falling tobacco is located in Applicant's invention. Conveyance of tobacco in Applicant's invention is by way of free-falling tobacco, whereas the step of transporting tobacco within the chamber of Rothchild's invention takes place on a belt conveyer and a tumbling cylinder.

Furthermore, in Applicant's invention, tobacco descends by free falling through

the pressurized chamber 3, from the inlet to the outlet. Although Rothchild's invention also has an inlet and an outlet (i.e., entrance and exit conduit), tobacco material does not directly descend by free falling from the inlet to the outlet. In Rothchild's invention, tobacco is entered through the entrance conduit 12, passed by gravity through a chute 15, and then tumbles down an inclined tumbling cylinder 16, after which it is emptied into the exit conduit 13. In Applicant's invention, the inlet of the chamber is located directly vertically above the outlet to aid in the free falling of tobacco particles from the inlet to the outlet. Rothchild does not teach this vertical arrangement.

Additionally, Applicant's invention teaches two cellular wheel sluices, one of which is located near the entrance of the chamber 1, and the other located near the exit of the chamber 4, before the horizontal airflow dryer. The lower cellular wheel sluice 4 (near the discharge exit and before the horizontal airflow dryer) is run at a higher conveying volume than the upper cellular wheel sluice 1 to avoid any unwanted buildup of tobacco in the pressurized chamber. Rothchild does not teach a wheel sluice at the exit with either a faster speed or a greater chamber volume for the wheel sluice, as taught by Applicant's invention. Rothchild teaches an exit lock (wheel sluice) that is similar to the entrance lock. The use of a cellular wheel sluice which is "pressure differential proof," as in Applicant's invention and not taught by Rothchild, is important because it maintains a largely constant absolute pressure in the chamber interior, and therefore a constant pressure differential between the atmospheric pressure outside the

chamber and the interior pressure of the chamber.

Lastly, Applicant's invention teaches a heating jacket surrounding the vertical pressurized chamber. The heating jacket, into which vapor of a slightly higher temperature than the vapor temperature of the ring nozzle vapor temperature, prevents water vapor from condensing on the inside wall of the pressure chamber. Condensation could impede the tobacco processing. Rothchild does not teach this heating jacket.

These distinctions are claimed in Applicant's invention, and are submitted to be of patentable merit under 35 U.S.C. §103 or §102. Applicant's invention eliminates a step, thereby increasing the running time of the method, by combining the free fall of the tobacco and the impregnation in the pressurized chamber into one step. The falling time for covering a distance of about 1m is only about 0.5s. Also, free falling particles are more likely to remain separated from each other, and not clump together as on a conveyor belt, which is beneficial for more uniformity of particle impregnation, particularly when the impregnation occurs during a free fall as opposed to when they are on a conveyor belt and tumbling apparatus. Furthermore, the elimination of a step increases production volume, and Applicant's invention is more energy efficient, because the conveyor belt and inclined tumbling cylinder are absent from Applicant's invention.

Since Applicant's attorney asserts that the Examiner's cited reference fails to disclose every element of independent claims 6 and 16, as amended, of the instant invention, the Rothchild reference fails to anticipate the instant invention and Applicant's attorney respectfully requests this ground of rejection be withdrawn. Claims 6 and 16 have

been amended and are both believed to be allowable. Since claim 16 is believed to be allowable, claims 17-18 and 21-22, which depend from claim 16, are also believed to be allowable. Applicant's attorney therefore respectfully requests this ground of rejection be withdrawn.

35 U.S.C. §103(a) Rejection of Claims 7-10 and 19

The Examiner has rejected claims 7-10 and 19 under 35 U.S.C. §103(a) as being obvious over Rothchild (U.S. Patent No. 4,561,453) in view of Grigutsch et al (U.S. Patent No. 6,158,441). Applicant's attorney has canceled claims 7-8, rendering these grounds of rejection moot. Regarding claims 9-10 and 19, Applicant's Attorney respectfully traverses this ground of rejection

Claims 7 and 8

Applicant's attorney has canceled claims 7 and 8, rendering these grounds of rejection moot.

Claims 9, 10, and 19

Regarding claims 9, 10, and 19, the Examiner alleges that the discharge direction articulated in the claims is not deemed to patentably distinguish them from the references since these would have been obvious modifications to one having ordinary skill in the art after endeavoring to optimize the angle of the nozzles to provide the most effective delivering of conditioning material to the conveyed tobacco.

MPEP §2142 states:

> To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the

> references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teachings or suggestions to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

Applicant's attorney has shown an improved combination. As such, Examiner has failed to make a prima facie showing of obviousness. The prior art references, alone or in combination, fail to teach or suggest all the claim limitations, specifically the optimized angling of the ring nozzles as well as the heating aspects of the chamber as claimed and previously discussed. The optimized angling of the ring nozzles assists the conveying movement of the tobacco, thus accelerating free-fall and ultimately increasing the rate of processing. Also, Applicant's invention claims a vertical chamber, in which the inlet of the chamber is located directly vertically above the oulet, through which tobacco particles free fall from the inlet to the outlet to a horizontal airflow dryer. Applicant's invention also teaches two cellular wheels sluices, in which the lower cellular wheel sluice (near the outlet and before the horizontal airflow dryer) runs at a higher conveying volume than the upper cellular wheel sluice. Additionally, Applicant's invention teaches a heating jacket surrounding the vertical pressurized chamber.

With respect to the Rothchild and Grigutsch references, the alleged obviousness is hindsight garnered from the disclosure of Applicant's invention. Also, any advantages produced by a combination of Rothchild and Grigutsch—such as acceleration of tobacco free fall and avoidance of unwanted tobacco build up—actually militate in favor of

Applicant because it proves that the combination produces new and unexpected results and is hence unobvious. As such, Applicant's attorney believes claims 9-10 and 19 to be allowable. Applicant's attorney therefore respectfully requests this ground of rejection withdrawn.

35 U.S.C. §103(a) Rejection of Claims 6, 13-18, and 21-24

The Examiner has rejected claims 6, 13-18, and 21-24 under 35 U.S.C. §103(a) as being obvious over Rickett et al (U.S. Patent No. 4,791,942). Applicant's attorney has amended claims 6 and 16, rendering these grounds of rejection moot.

The Examiner alleges that Rickett et al discloses an apparatus for the treatment of tobacco comprising a vessel capable of being pressurized from 5-300 psig, and having an inlet for tobacco to enter and an outlet for tobacco to exit the vessel. The flow of tobacco may be by gravity, so it is preferable to locate the inlet substantially vertically over the outlet which discharges treated tobacco into a duct, according to Rickett et al. Both the inlet and outlet openings of Rickett's et al invention are provided with ball valves, and one or more conduits, connected to a source of treating agent and pressure extends into the vessel, and a plurality of openings located along the conduit for delivering the agent to the falling tobacco. The Examiner further alleges that, while Rickett et al does not specifically disclose that the conduit contains nozzles in conjunction with the openings, one having ordinary skill in the art would have been motivated to provide nozzles, since these devices are conventional for distributing a fluid. According to the Examiner, the nozzles of Rickett et al would then be *capable* of delivering any fluid, such as water vapor. The Examiner

also alleges that it is apparent from FIG. 4, where the vessel expands in a tapered manner downwardly, such that it would obviously have a slightly higher conveying volume at the lower exit valve than at the upper inlet valve.

In Rickett et al, there is no free-fall of the tobacco particles, which are transported in the direction of the arrow 48 by the respective rotating vanes 30 through a rotary lock. In Rickett et al, the pressure in the vessel is increased slowly, so that the treatment medium can penetrate the tobacco mass. After the treatment time, the pressure is reduced slowly, and the compressed tobacco mass can exit teh vessel along the broad, interfereing ball valve 98. The interfering ball valve of Rickett et al cannot be compared with rotary sluices as used for Applicant's invention. Applicant's invention calls for the treatment of free-falling tobacco particles with shorter treatment periods. The pressure increase and pressure decrease occur nearly instantaneously, since the pressure compensation occurs always between the small volumes of the rotary sluice and the large volume of the pressure chamber at the introduction of the tobacco into the chamber or at the exit into the atmosphere upon discharging the tobacco from the pressure-proof chamber.

Furthermore, Applicant's claims 6 and 16 as amended claims a heating jacket. This limitation is not taught or suggested by the Rickett et al reference: Rickett et al does not teach an arrangement of ring nozzles or a heating jacket. Although spray nozzles are conventional in the art for distributing a fluid, the *arrangement* of the nozzles is important to prevent catching tobacco edges which could result in the accumulation of tobacco, and the heating jacket prevents water vapor from condensing on the inside walls of the pressure

chamber. Applicant submits that the novel features of claims 6 and 16 are unobvious and hence patentable under 35 U.S.C. §103 since it produces new and unexpected results over Rickett et al.

Furthermore, Applicant's invention teaches a discharge wheel sluice that runs at a slightly higher conveying volume than the feed sluice. Rickett et al does not teach any variation in chamber volume or speed of the feed sluice. A slightly higher conveying volume of the discharge wheel sluice is important in order to avoid any unwanted build up of tobacco in the pressurized chamber. Thus, Applicant submits that his invention clearly recites unobvious subject matter which distinguishes over Ricket et al.

In addition, Applicant submits that the features of his invention are unobvious and hence patentable under 35 U.S.C. §103 since they produce new and unexpected results. For example, the vertical arrangement of the pressure chamber allowing tobacco free-fall, the arrangement of the spray nozzles at an incline and flush with the interior of the chamber, and the differing conveying volume of the sluices, all work together to prevent unwanted build up of tobacco within the chamber and promote a even faster and more efficient method of tobacco processing. This arrangement is significant because the falling time of the tobacco for covering a distance of about 1m is only about 0.5s

Since claim 6 is believed to be allowable as amended, claim 13-15, which depend from claim 6, are also believed to be allowable. Since claim 16 is believed to be allowable as amended, claims 17, 18, and 21-24, which depend directly or indirectly from claim 16, are also believed to be allowable.

Allowable Subject Matter

The Examiner contends that claims 11-12, 20, 26, 27, and 31 are objected to as being dependent upon a rejected base claim. Claim 6 has been amended, and therefore is believed to be allowable. As such, claim 12, which depends from claim 6, is also believed to be allowable. Claim 11, which depends upon claim 6, has been canceled. Claim 16 has been amended, and therefore is also believed to be allowable. Claim 20 has been canceled. Claim 26 is dependent upon claim 25, which is not a rejected base claim. Claims 27 and 31 are all written in independent form. The Examiner declared that claims 27 and 31 would be allowable if written in independent form. Applicant's attorney therefore respectfully requests claims 12, 26, 27, and 31 be allowed.

Response to Arguments

The Examiner states that Applicant's arguments filed on March 27th, 2003, were considered and were persuasive, and that the rejections of the First Office Action have been withdrawn. Applicant's attorney has addressed the new grounds of rejection made in view of newly found references, as stated above.

Conclusion

Applicant's attorney asserts that the instant application is in condition for allowance. Applicant's attorney, therefore, respectfully requests that the Examiner allow the pending claims. However, if the Examiner believes there are other unresolved issues in this case, Applicant's attorney of record would appreciate a call at (502) 584-1135.

Respectfully submitted,

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Suzan J. Hixon, Reg. No. 54,171
MIDDLETON REUTLINGER
2500 Brown & Williamson Tower
Louisville, Kentucky 40202
(502) 584-1135 phone
(502) 561-0442 fax
email: shixon@middreut.com